

BIO-BASED AND COMPOSTABLE PLASTICS: HOW IT ALL BREAKS DOWN

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With the proliferation of compostable and bio-based plastic items on the market, many questions have been brought to MCS regarding their use in organic systems. Product marketing, terminology, and efforts to free organic farming from its reliance on plastic waste make this a confusing subject, especially when the NOP rule gets layered in. In short, bio-based and compostable plastics are not allowed in organic systems -- but let's break it down!

What are bio-based and compostable plastics?

Bio-based plastics make up a broad category of plastics derived from living (or once-living) organisms. Currently available biodegradable mulches are often made with corn, soybean protein, cellulose, or potato starches, as well as from petroleum feedstocks. The conditions and timeline necessary for their breakdown vary widely and there are no requirements that these plastics leave no toxic residues behind after breaking down.

Compostable plastics are a specific subset of bio-based plastics that meet standards defined by the plastics industry: they break down into carbon dioxide, biomass, water, and chemical residuals; they disintegrate into non-visible pieces; and they do not create any toxic material upon breaking down. The breakdown process of compostable

plastics varies widely depending on the composting conditions and the particular objects being composted.

Are bio-based plastics allowed in organic production?

No, not currently.

Despite being called bio-based, biodegradable plastic products are created through a chemical synthesis. As such, bio-based plastics are classified as synthetic materials by the NOP and subject to rigorous review by the National Organic Standards Board. While an allowance has been written into the Rule for the use of bio-based mulch for crop farms, **currently no bio-based films on the market meet the criteria in NOP rules 205.601(b)(2)(iii) and 205.2.**

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At present, the NOP rule allows bio-based mulch film in organic production, provided that it is produced without the use of GMOs and other excluded methods, and must meet strict specifications regarding compostability, biodegradability, and bio-based content. So, while it is theoretically possible for a bio-based mulch to be allowed in organic production, currently none of the existing products on the market meet this standard.

Are bio-based and compostable plastics allowed as feedstocks in NOP-approved compost?

The short answer: No.

NOP-approved compost must meet several layers of compliance, including the assurance that compost is made from

approved feedstocks that prevent the contamination of soil.

As with bio-based mulches, compostable plastic items (like utensils, packaging, or bags) are not currently manufactured to meet NOP-approved standards for compostability, bio-based content, or biodegradability. **Therefore, compostable plastics are considered prohibited materials and are not approved as a feedstock for NOP-approved compost.**

The final breakdown...

All currently available bio-based and compostable plastics on the market are prohibited as a NOP-approved compost feedstocks, and bio-based mulches are prohibited for use in crop production. For certified producers interested in this class of products, stay tuned and be in touch with your certification specialist as it is conceivable that new manufacturing processes may be able to bring NOP-compliant products to the market in the future.

For more information, please contact the MCS office <certification@mofga.org> or 207-568-6030

Further Reading

OMRI "Compost Standards" <https://www.omri.org/compost-standards>

Allowed Mulches on Organic Farms and the Future of Biodegradable Mulch <https://www.ams.usda.gov/sites/default/files/media/5%20Mulches%20incl%20biodegradable%20FINAL%20RGK%20V2.pdf>

